

Application No. 10/667,398
Response to Office Action of August 2, 2006

Patent
Attorney Docket No. 86331-11

REMARKS

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In response to the Office Action, the Applicant offers the following remarks.

Claims 1 to 3, 5 to 17 and new claims 38 to 40 were examined. Original claims 18 to 37 were previously withdrawn from consideration, and original claim 4 was previously cancelled.

Claims 1, 10, 12, 13, 15, 16 and 17 are currently amended, claim 39 is currently cancelled without prejudice or disclaimer. Claims 1 to 3, 5 to 17, 38 and 40 are currently pending.

The present patent application now comprises thirty-eight (38) claims. No new matter has been added. Support for the amendments can be found throughout the present patent application including the drawings and claims as originally filed. The amendments do not narrow the scope of the claims, nor does the Applicant believe that the amendments are necessary to distinguish the claimed invention from the cited patents.

Claim Rejection

The Office Action rejects claims 16 and 17 under 35 USC §112 as being unpatentable (indefinite). The Office Action rejects claims 1 to 3, 5 to 11, 14 and 38 to 40 under 35 USC §102(b) as defining an invention that is anticipated by U.S. Patent 4,093,188 (Horner) when taken with U.S. Patent 3,743,250 (Fitzhugh, Jr. *et al.*). The Office Action also rejects claims 1, 12, 13 and 15 to 17 as defining an invention that is anticipated by U.S. Patent 5,998,006 (Bambara *et al.*).

Claims 16 and 17 have been amended in order to comply with 35 USC §112. Independent claims 1 and 15 have been amended in order to further specify features that are neither disclosed nor suggested by either Horner or Bambara *et al.* The Applicant respectfully submits that these claims are patentable and requests reconsideration of the Examiner's rejections in view of the following remarks.

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A. Patentability of claims 1 to 3, 5 to 14, 38 and 40

According to MPEP § 706.02, in order to reject a claim under 35 U.S.C. § 102(b) as being anticipated by a patent, the Examiner must determine that such patent teaches every aspect of the claimed invention either explicitly or implicitly. Any feature not directly taught must be inherently present.

1. U.S. Patents 4,093,188 (Horner) and 3,743,250 (Fitzhugh *et al*)

The Applicant brings to the Examiner's attention the following highlighted features that are neither disclosed nor suggested by Horner or Fitzhugh *et al*:

1. A process for creating color effects in extrudable material, said process comprising:
 - a) providing a first flow of viscous material of a first color;
 - b) providing a second flow of viscous material of a second color, said second color being different from said first color;
 - c) combining in a predetermined pattern said first flow and said second flow to form a stream of viscous material, said stream comprising a first band of said first color and a second band of said second color, said second band being adjacent to said first band;
 - d) in a static mixer having a predetermined number of elements and a predetermined diameter, applying a predetermined dividing, overturning and combining motion to said stream for a predetermined number of times thereby partially mixing said first band and said second band, such that said first and second bands remain in the stream and said stream further comprises a third band of a third color that is different from said first and second colors.

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wherein said predetermined dividing, overturning and combining motion is determined by said predetermined number of elements and said predetermined diameter of the static mixer, and wherein said predetermined number of elements and said predetermined diameter are determined by a parameter selected from the type of viscous material, viscosity of said first and second flow of viscous material, the respective rate of flow of said first and second flows, the total rate of flow of said stream, and combinations thereof. [emphasis added]

Regarding the Examiner's rejection based upon Fitzhugh *et al* in combination with Horner, the Applicant respectfully submits that both Fitzhugh *et al* and Horner teach a static mixer for homogenous and efficient blending of fluid streams; this is explicitly disclosed in Horner: "Despite the effectiveness of the Fitzhugh *et al* device, it has been found that the static mixer of the present invention provides even more efficient blending" [Column 2, lines 5-8, emphasis added].

Furthermore, Horner explicitly teaches that its static mixer has a shorter length than the one disclosed in Fitzhugh *et al*: "However, an experiment has shown that the length of the mixing element needed for substantially complete blending according to the present invention is significantly shorter than the length needed for blending the same fluids using a mixer element as described in Fitzhugh *et al*" [column 8, lines 28-34, emphasis added].

Therefore, the Applicant respectfully submits that any one skilled in the art would not turn to either of Fitzhugh *et al* or Horner in looking for teachings of a process for creating color effects using the claimed steps, as Horner explicitly teaches efficient blending that is even more efficient than the one taught in Fitzhugh *et al*. Nowhere in the cited patents do the inventors disclose or suggest a process for creating color effects whereby the predetermined dividing, overturning and combining motion is determined by the predetermined number of elements and the predetermined diameter of the static mixer as recited in claim 1 (as opposed to the length of the Fitzhugh *et al* taught in Horner), which are both determined by a parameter selected from the physical properties of the first and second flow of viscous material, the respective rate of flow of the first and second flows, the total rate of flow of the stream, and their combinations (see specification at page 14,

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lines 29-33, page 15, lines 12-17, and page 18, lines 23-32). These features are neither taught nor suggested by Horner or Fitzhugh *et al.*

It is therefore submitted that claim 1 is patentable over Horner and Fitzhugh *et al* and withdrawal of the Examiner's rejection and allowance of this claim are earnestly solicited. Because claims 2, 3, 5 to 14, 38 and 40 depend directly or indirectly from claim 1 and include all of the features recited in claim 1, these claims are also patentable.

2. U.S. Patent 5,998,006 (Bambara *et al*)

The Applicant brings to the Examiner's attention that the following highlighted features are neither disclosed nor suggested by Bambara *et al*:

1. A process for creating color effects in extrudable material, said process comprising:
 - a) providing a first flow of viscous material of a first color;
 - b) providing a second flow of viscous material of a second color, said second color being different from said first color;
 - c) combining in a predetermined pattern said first flow and said second flow to form a stream of viscous material, said stream comprising a first band of said first color and a second band of said second color, said second band being adjacent to said first band;
 - d) in a static mixer having a predetermined number of elements and a predetermined diameter, applying a predetermined dividing, overturning and combining motion to said stream for a predetermined number of times thereby partially mixing said first and said second bands, such that said first and second bands remain in the stream and said stream further comprises a third band of a third color that is different said first and second colors,wherein said predetermined dividing, overturning and combining motion is determined by said predetermined number of elements and said predetermined

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diameter of the static mixer, and wherein said predetermined number of elements and said predetermined diameter are determined by a parameter selected from the type of viscous material, viscosity of said first and second flow of viscous material, the respective rate of flow of said first and second flows, the total rate of flow of said stream, and combinations thereof.
[emphasis added]

The Examiner indicates that Bambara *et al* teaches a breaker plate which inherently divides the flow pattern and causes turbulent mixing. The Applicant traverses this objection and respectfully submits that the Examiner's position is based on an assumption that a person skilled in the art would not have made from the teachings of Bambara *et al*.

Bambara *et al* explicitly teaches that the breaker plate divides the colored region from the non-colored regions (which inherently teaches that there is no turbulent mixing between both regions) for creating variegations: "The mesh of the screen pack 30 and the openings 28 in the breaker plate 26 divide the regions of the melted composition colored by the liquid color from regions of the unmodified base color of the melted composition as it flows to the die. This interaction produces variegations downstream after passing through breaker plate assembly" [column 4, lines 21-26, emphasis added]. In that sense, the Bambara *et al* breaker plate does not mix the different colored fluids.

In Bambara *et al*, the composition comprising a first color and a second color is substantially not mixed: (1) "The liquid color is injected after the mixing section of the extruder" [Column 4, lines 1-3, emphasis added]; and (2) "since the composition does not mix substantially after injection of the liquid color." [Column 4, lines 32-34, emphasis added].

Because the color is injected after the mixing section of the extruder in Bambara *et al*, this patent teaches away from the claimed applying a predetermined dividing, overturning and combining motion for a predetermined number of times to a stream thereby partially mixing this stream comprising a first and a second color.

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Furthermore, claim 1 calls for the use of a static mixer having a predetermined number of elements and a predetermined diameter which is determined based on properties selected from the type of viscous material, viscosity of said first and second flow of viscous material, the respective rate of flow of said first and second flows, the total rate of flow of said stream, and their combinations (see specification at page 14, lines 29-33, page 15, lines 12-17, and page 18, lines 23-32). These features are neither taught nor suggested by Bambara *et al.*

It is therefore submitted that claim 1 is patentable over Bambara *et al* and allowance of this claim and withdrawal of the Examiner's rejection are earnestly solicited. Because claims 2, 3, 5 to 14, 38 and 40 depend directly or indirectly from claim 1 and include all of the features recited in claim 1, these claims are also patentable.

B. Patentability of claims 15 to 17

The Applicant brings to the Examiner's attention the following highlighted features that are neither disclosed nor suggested by Bambara *et al*:

15. A process for manufacturing a sheet from extrudable material, said process comprising:
- a) providing a first flow of viscous material of a first color;
 - b) providing a second flow of viscous material of a second color, said second color being different from said first color;
 - c) combining in a predetermined pattern said first flow and said second flow to form a stream of viscous material, said stream comprising a first band of said first color and a second band of said second color, said second band being adjacent to said first band;
 - d) in a static mixer having a predetermined number of elements and a predetermined diameter, applying a predetermined dividing, overturning and combining motion to said stream for a predetermined number of times thereby partially mixing said first band and said second band, such that said first and second bands remain in the stream and said stream further comprises a third band of a third color that is different from said first and

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second colors, said third band being located between said first and second bands;

- e) after applying the dividing, overturning and combining motion for a predetermined number of times, feeding said stream through a die for forming a sheet of material comprising a gradation of color,

wherein said predetermined dividing, overturning and combining motion is determined by said predetermined number of elements and said predetermined diameter of the static mixer, and wherein said predetermined number of elements and said predetermined diameter are determined by a parameter selected from the type of viscous material, viscosity of said first and second flow of viscous material, the respective rate of flow of said first and second flows, the total rate of flow of said stream, and combinations thereof [emphasis added].

For the same reasons as those set forth with respect to claim 1, it is submitted that claim 15 is patentable over Bambara *et al* and allowance of this claim and withdrawal of the Examiner's rejection are earnestly solicited.

C. Patentability of claims 16 and 17

Claims 16 and 17 have been amended as product-by-process claims in order to comply with 35 USC §112. Because these claims depend directly from claim 15 and include all of the features recited in claim 15, they are also patentable. Allowance of claims 16 and 17 is therefore earnestly solicited.

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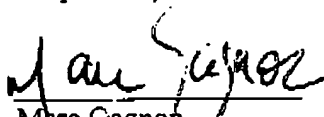
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CONCLUSION

In view of the above, reconsideration of the Examiner's rejections and allowance of pending claims 1 to 3, 5 to 17, 38 and 40 are earnestly solicited. The Applicant looks forward to receiving the Notice of Allowance.

The Examiner is invited to call the Applicant's undersigned representative if any further amendment will expedite the prosecution of the application or if the Examiner has any suggestions or questions concerning the present response. If the claims of the application are not believed to be in full condition for allowance, for any reason, the Applicant respectfully requests the constructive assistance and suggestions of the Examiner in drafting one or more acceptable claims pursuant to MPEP § 707.07(j) or in making constructive suggestions pursuant to MPEP § 706.03 so that the application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Respectfully submitted,


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Dated: November 2, 2006
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